



DOCKET NO: D0540-7003.10

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Chul Park, et al.  
Serial No: 10/764,281  
Confirmation No: 9689  
Filed: January 23, 2004  
For: THE EFFECT OF CATIONS ON ACTIVATED SLUDGE  
CHARACTERISTICS

Examiner: Not Yet Assigned  
Art Unit: 1723

CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8(a)

The undersigned hereby certifies that this document is being placed in the United States mail with first-class postage attached, addressed to Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the 11 day of June, 2004.

  
\_\_\_\_\_  
Jeanne W. Chub

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Transmitted herewith are the following documents:

- ☒ Information Disclosure Statement, Form PTO 1449 and Cited References
- ☒ Return Receipt Postcard

If the enclosed papers are considered incomplete, the Mail Room and/or the Application Branch is respectfully requested to contact the undersigned at (617) 395-7000.

A check is not enclosed. If a fee is required, the Commissioner is hereby authorized to charge Deposit Account No. 500214. A duplicate of this sheet is enclosed.

Respectfully submitted,  
*Chul Park, et al., Applicants*

By: 

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Date: June 11, 2004  
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Jeanne W. Chub

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Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**STATEMENT FILED PURSUANT TO THE DUTY OF  
DISCLOSURE UNDER 37 CFR §§1.56, 1.97 AND 1.98**

Sir:

Pursuant to the duty of disclosure under 37 C.F.R. §§1.56, 1.97 and 1.98, Applicants request consideration of this Information Disclosure Statement.

**PART I: Compliance with 37 C.F.R. §1.97**

This Information Disclosure Statement has been filed before the mailing date of a first Office Action on the merits in the above-identified case.

No fee or certification is required.

**PART II: Information Cited**

Applicants hereby make of record in the above-identified application the information listed on the attached form PTO-1449 (modified). The order of presentation of the references should not be construed as an indication of the importance of the references.

Applicants hereby make the following additional information of record in the above-identified application.

Applicants would like to bring to the Examiner's attention the following co-pending applications that may contain subject matter related to this application:

<u>Serial No.</u>	<u>Filing Date</u>	<u>Inventor(s)</u>
10/025,371	12/19/2001	Mohammad Abu-Orf
60/490,976	07/28/2003	Mohammad Abu-Orf
10/461,276	06/13/2004	Mohammad Abu-Orf et al.

**PART III: Remarks**

Documents cited anywhere in the Information Disclosure Statement are enclosed unless otherwise indicated. It is respectfully requested that:

1. The Examiner consider completely the cited information, along with any other information, in reaching a determination concerning the patentability of the present claims;
2. The enclosed form PTO-1449 be signed by the Examiner to evidence that the cited information has been fully considered by the Patent and Trademark Office during the examination of this application;
3. The citations for the information be printed on any patent which issues from this application.

By submitting this Information Disclosure Statement, Applicant makes no representation that a search has been performed, of the extent of any search performed, or that more relevant information does not exist.

By submitting this Information Disclosure Statement, Applicants make no representation that the information cited in the Statement is, or is considered to be, material to patentability as defined in 37 C.F.R. §1.56(b).

By submitting this Information Disclosure Statement, Applicants make no representation that the information cited in the Statement is, or is considered to be, in fact, prior art as defined by 35 U.S.C. §102.

Notwithstanding any statements by Applicants, the Examiner is urged to form his own conclusion regarding the relevance of the cited information.

An early and favorable action is hereby requested.

Respectfully submitted,  
*Chul Park, et al., Applicants*

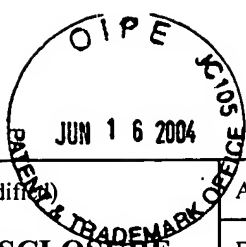
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Docket No. D0540-7003.10

Date: June 11, 2004

**XXNDD**



FORM PTO-1449/A and B (Modified)		APPLICATION NO.: 10/764,281	ATTY. DOCKET NO.: D0540-7003.10
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>		FILING DATE: 01/23/2004	CONFIRMATION NO.: 9689
		APPLICANT: Chul Park, et al.	
		GROUP ART UNIT: 1723	EXAMINER: Not Yet Assigned
Sheet	1	of	3

#### U.S. PATENT DOCUMENTS

Examiner's Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication or of issue of Cited Document MM-DD-YYYY
		Number	Kind Code		
		3,738,932		Kostenbader	06-12-1973
		4,544,489		Campbell et al.	10-01-1985
		4,675,116		Hoyland	06-23-1987
		4,985,149		Ohshima et al.	01-15-1991
		5,003,814		Crawford et al.	04-02-1991
		5,039,428		Wentzler et al.	08-13-1991
		5,084,186		Gilchrist	01-28-1992
		5,183,562		Totoki et al.	02-02-1993
		5,382,356		Thogho et al.	01-17-1995
		5,427,691		Kuyucak et al.	06-27-1995
		5,620,609		Field	04-15-1997
		5,645,799		Shah et al.	07-08-1997
		5,800,717		Ramsay et al.	09-01-1998
		5,846,425		Whiteman	12-08-1998
		5,902,487		Pickering et al.	05-11-1999
		6,083,404		Sommese et al.	07-04-2000
		6,210,587	B1	Vion	04-03-2001
		6,447,686	B1	Choi et al.	09-10-2002
		6,578,780	B2	Knauer et al.	06-17-2003
		6,578,781	B2	Knauer et al.	06-17-2003
		2003/0111421	A1	Abu-Orf	06-19-2003
		2003/0230538	A1	Abu-Orf et al.	12-18-2003

#### FOREIGN PATENT DOCUMENTS

Examiner's Initials	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document (not necessary)	Date of Publication of Cited Document MM-DD-YYYY	Translation (Y/N)
		Office/ Country	Number	Kind Code			
		WO	03/038350	A1	Sonico Limited	05-08-2003	
		WO	03/051531	A1	Sonico Limited	06-26-2003	

EXAMINER	DATE CONSIDERED
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#EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

\*a copy of this reference is not provided as it was previously cited by or submitted to the office in a prior application, Serial No. \_\_, filed \_\_, and relied upon for an earlier filing date under 35 U.S.C. 120 (continuation, continuation-in-part, and divisional applications).

<b>FORM PTO-1449/A and B (Modified)</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>				APPLICATION NO.: 10/764,281		ATTY. DOCKET NO.: D0540-7003.10	
				FILING DATE: 01/23/2004		CONFIRMATION NO.: 9689	
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Sheet	2	of	3				

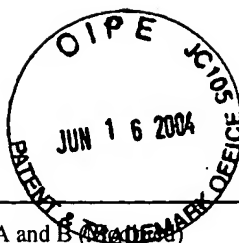
**OTHER ART — NON PATENT LITERATURE DOCUMENTS**

Examiner's Initials	Cite No	Include name of the author (in CAPITAL LETTERS) title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, relevant page(s), volume-issue number(s), publisher, city and/or country where published.	Translation (Y/N)
		J. KEGEBEIN et al., "Effects of Chemical Agents on Filamentous Growth and Activated Sludge Properties," <i>Chemical Water and Wastewater Treatment VII</i> , (June 2002), pp. 273-283, JWA Publishing, London.	
		DENTEL et al., "Laboratory and Full-Scale Studies of Liquid Stream Viscosity and Streaming Current for Characterization and Monitoring of Dewaterability", (1995), pp. 2663-2672, <i>Wat. Res.</i> , Vol. 29, No. 12.	
		PAPAVASILOPOULOS et al., "On the Role of Aluminum Hydroxide in the Conditioning of an Alum Sludge", (1998) pp. 33-40, <i>Wat. Sci. Tech.</i> Vol. 38, No. 2.	
		ABU-ORF et al., "Use of Liquid Stream Viscosity in Sludge Dewaterability Assessment: Laboratory and Full-scale Studies", (October 15-19, 1994), pp. 140-152, Water Environment Federation 67 <sup>th</sup> Annual Exhibition.	
		"Sludge Management Entering the 3 <sup>rd</sup> Millennium", Conference Proceeding Topics List, (March 25-28, 2001), 3 pages.	
		ABU-ORF et al., "On-Line Monitoring of Polymer Feed Using Centrate Viscosity", (publication date unknown), (publication unknown)	
		A. TIEHM et al., "Ultrasonic Waste Activated Sludge Disintegration For Improving Anaerobic Stabilization", <i>Wat. Res.</i> Vol. 35, No. 8, (2001) pp. 2003-2009.	
		BACHE et al., "Viscous Behaviour of Sludge Centrate in Response to Polymer Conditioning," <i>Wat. Res.</i> , 1999, Vol. 34, No. 1, pp. 354-358.	
		NOVAK et al., "Chemical Conditioning and the Resistance of Sludges to Shear," <i>Journal WPCF</i> , March 1989, Vol. 61, No. 3, pp. 327-332.	
		ABU-ORF et al. (1999). "Rheology as a Tool for Polymer Dose Assessment and Control," <i>J. Envr. Engr.</i> , 125, No. 12, pp. 1133-1141.	
		ABU-ORF et al. (1997) "Effect of Mixing on the Rheological Characteristics of Conditioned Sludge: Full-Scale Studies," <i>Water Sci. Techn.</i> , 36, No. 11, pp. 51-60.	
		CAMPBELL et al. (1982) "The use of rheology for sludge characterization," <i>Water Sci. Technol.</i> 14, pp. 475-489.	
		DENTEL (1997) "Evaluation and role of rheological properties in sludge management," <i>Water Sci. Techn.</i> , 36(11), pp. 1-8.	
		GLASCOW et al. (1982) "An experimental study of floc strength," <i>J. AIChE</i> , 28(5), pp. 779-785.	
		HANNAH et al. (1967) "Measurement of floc strength by particle counting," <i>J. AWWA</i> , January 1967, pp. 843-858.	
		HIGGINS et al. (1997), "The effect of cations on the settling and dewatering of activated sludges: Laboratory results," <i>Water Environ. Res.</i> , 69(2), pp. 215-224.	
		HIGGINS et al. (1997), "Dewatering and settling of activated sludges: The case for using cation analysis," <i>Water Environ. Res.</i> , 69(2), pp. 225-232.	
		LANGER et al. (1994) "Mechanisms of floc formation in sludge conditioning with polymers," <i>Water Sci. Tech.</i> , 30(8), p. 129-138.	
		MICHAELS et al. (1962) "The plastic flow behavior of flocculated kaolin suspensions," <i>Ind. &amp; Eng. Chem. Fund.</i> , 1(3), pp. 153-162.	

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FORM PTO-1449/A and B (Rev. 10-2003)		APPLICATION NO.: 10/764,281	ATTY. DOCKET NO.: D0540-7003.10
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### OTHER ART — NON PATENT LITERATURE DOCUMENTS

Examiner's Initials	Cite No	Include name of the author (in CAPITAL LETTERS) title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, relevant page(s), volume-issue number(s), publisher, city and/or country where published.	Translation (Y/N)
		NOVAK et al. (1998) "The effect of cationic salt addition on the settling and dewatering properties of an industrial activated sludge," <i>Water Environ. Res.</i> , 70(5) pp. 984-996.	
		NOVAK et al. (1994) "The effect of shear on the dewatering of water treatment residuals," <i>J. AWWA</i> , November 1994, pp. 84-91.	
		NOVAK (1990), "The effect of mixing on the performance of sludge conditioning chemical," <i>Water Supply</i> , 8, pp. 53-60.	
		NOVAK et al. (1979) "Chemical conditioning of activated sludge," <i>J. Environ. Engr.</i> 105(5) pp. 993-1008.	
		TAMBO et al. (1979) "Physical characteristics of flocs-II strength of floc," <i>Water Res.</i> 13, pp. 421-427.	
		YEUNG et al. (1996) "Micromechanics: A new approach to studying the strength and breakup of flocs," <i>J. Colloid and Interf. Sci.</i> , 184, pp. 579-585.	
		YEN et al. (2002) "Network strength and dewaterability of flocculated sludge," <i>Water Res.</i> , 36, pp. 539-550	
		"Sonix" printed from <a href="http://www.sonico.net">www.sonico.net</a> on 7/2/2003 (2 pages).	
		"PuracAtkins" printed from <a href="http://www.sonico.net">www.sonico.net</a> on 7/2/2003 (1 page).	
		"Avonmouth Waste Water Treatment Works", printed from <a href="http://www.sonico.net">www.sonico.net</a> (pp. 1-2) (publication date unknown).	
		"Control of Filamentous Bulking & BNR Enhancement" printed from <a href="http://www.sonico.net">www.sonico.net</a> (pp. 1-2) (publication date unknown).	
		"Orange County Sanitation District, California" printed from <a href="http://www.sonico.net">www.sonico.net</a> , (pp. 1-2) (publication date unknown).	
		"What are sound waves?" printed from <a href="http://www.sonico.net">www.sonico.net</a> on 7/2/2003 (1 page).	
		"What is ultrasound?" printed from <a href="http://www.sonico.net">www.sonico.net</a> on 7/2/2003 (1 page).	
		"Ultrasonic cavitation" printed from <a href="http://www.sonico.net">www.sonico.net</a> on 7/2/2003 (2 pages).	
		"Ultrasound to enhance sludge digestion" printed from <a href="http://www.sonico.net">www.sonico.net</a> on 7/2/2003 (2 pages).	
		"Ultrasound in the water industry" printed from <a href="http://www.sonico.net">www.sonico.net</a> on 7/2/2003 (1 page).	
		"FAQs" printed from <a href="http://www.sonico.net">www.sonico.net</a> on 7/2/2003 (2 pages).	
		H. WAY, "A Vertical Grinding Solution," published by NETZSCH, Exton, PA (date unknown).	
		"NETZSCH Wet Grinding Equipment" printed from <a href="http://www.netzschusa.com">www.netzschusa.com</a> on 7/7/2003 (3 pages).	
		"Vertical Ball Mill Slaking and Grinding Systems Featuring the Union Process Attritor Stirred Vertical Ball Mill" printed from <a href="http://www.chemcoequipment.com">www.chemcoequipment.com</a> on 7/7/2003 (2 pages).	

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